

## Four New Species of the Family Zodariidae (Araneae) from Malaysia

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**Abstract.** Three new species of the genus *Mallinella* Strand, 1906, and a new genus and species of the spider family Zodariidae are described from the Peninsular Malaysia under the names, *Mallinella gombakensis* sp. nov., *Mallinella maruyamai* sp. nov., *Mallinella tumidifemoris* sp. nov. and *Malayozodarium hoiseni* gen. et sp. nov. The *Mallinella* species were collected from the forest floor in the Ulu Gombak Field Study Center of the University of Malaya, Selangor, Malaysia, as secondary findings of the flight intercept trapping for insects, while the peculiar new zodariid, *Malayozodarium*, was collected in a forest near Tanah Rata in Cameron Highlands, Pahang, Malaysia, with sifting method. Characteristics and relationships are diagnosed for each species.

**Key words:** Taxonomy, Arachnida, Araneae, Zodariidae, Malaysia

## Introduction

Nine genera of zodariid spiders including about 80 species are recorded from Southeast Asian countries, Myanmar, Vietnam, Thailand, Cambodia, Malaysia, Singapore, Indonesia and the Philippines, that is, *Akyttara* Jocqué, 1987 (1 species), *Asceua* Thorell, 1887 (9 species), *Cryptothele* L. Koch, 1872 (3 species), *Cydrela* Thorell, 1873 (2 species), *Euryeidon* Dankittipakul et Jocqué, 2004 (6 species), *Heradion* Dankittipakul et Jocqué, 2004 (9 species), *Mallinella* Strand, 1906 (22 species), *Storena* Walckenaer, 1805 (20 species), *Storenomorpha* Simon, 1884 (5 species) and *Zodarium* Walckenaer, 1826 (1 species). Of these, following seven spiders were recorded from the Peninsular Malaysia and Singapore: *Cryptothele sundaica* Thorell, 1890, *Heradion damrongi* Dankittipakul et Jocqué, 2004, *Heradion luctator* Dankittipakul et Jocqué, 2004, *Heradion pernix* Dankittipakul et Jocqué, 2004, *Mallinella cinctipes* (Simon, 1893), *Storena juvenica* Workman, 1896, *Storena obnubila* Simon, 1901 and *Storena sciophana* Simon, 1901.

However, old records of *Cryptothele*, *Storena* and *Zodarium* should be revised, because these genera are thought to be non Southeast Asian. The generic status of a Vietnamese zodariid spider *Akyttara odorocci* Ono, 2004, temporarily put into an African genus is also doubtful and may be a representative of another genus possibly new. Thus, *Asceua*, *Euryeidon*, *Heradion*, *Mallinella* (Zodariinae), *Cydrela* (Cydrelineae), and *Storenomorpha* (Storenomorphinae) are at present regarded as surely known genera from Southeast Asia (Dankittipakul & Jocqué, 2004, 2006).

As a part of the research project “Biodiversity inventory in the Western Pacific region” conducted by the National Museum of Nature and Science, Tokyo, the first author of the present paper (H. Ono) made arachnological research-trips in Malaysia in February 2006 and in January 2007. The field research was made under instruction of the Institute of Biological Sciences, University of Malaya at Kuala Lumpur, Malaysia. The study sites were selected mainly in the Ulu Gombak Field Study Center of the University of Malaya, Selangor, which lies about 30 km North of Kuala

Lumpur, altitude around 200 m, and in Cameron Highlands, Pahang, a hill resort 300 km North of Kuala Lumpur, altitude between 1700 m and 1800 m.

Spider specimens of various families collected during the researches have been studied in partnership between the present authors of the institutions in Tokyo and Kuala Lumpur. Other than these, some spider specimens collected with the flight intercept trapping (FIT) set by Dr. Munetoshi Maruyama at the Ulu Gombak Field Study Center were offered to the authors' study.

More than 30 individuals of Zodariidae were found in both the collections. Most of zodariid spiders are nocturnal hunters wandering on forest floor to prey upon insects and are hardly found in the fields with the naked eye. Because they are hidden under dead leaves and rocks in the daylight, such kind of trapping is quite effective in collecting those spiders.

The present paper deals with the result of a taxonomic study of the above material. Four new species of this family are described: three new species of the genus *Mallinella* and a new species of a new genus proposed herein.

### Materials and Methods

Most of the materials used for this study were obtained with FIT set by Dr. M. Maruyama in the period between 27 November and 3 December 2005 and between 15 and 19 June 2006 on the forests' floors in the area of the Ulu Gombak Field Study Center. One male specimen was collected with sifting method by H. Ono on 25 January 2007 in a forest near Tanah Rata in Cameron Highlands, Pahang, Malaysia. All the specimens were preserved in 76% ethanol and examined in Tokyo under a LEICA MZ16 stereomicroscope.

A total of 35 mature specimens, 33 males and 2 females, were provided for the taxonomic study. Of these, the males were classified into four species: three species of the genus *Mallinella* and one species of an unknown genus. After a careful examination these four species were considered to be new to science. Although the two

females were identified to be members of *Mallinella*, these were omitted because the present authors could not recognize their accurate specific combination.

The abbreviations of morphological terms used in the present paper are as follows: ALE, anterior lateral eye; AME, anterior median eye; PLE, posterior lateral eye; PME, posterior median eye. The description including the spination of legs follows those in the articles of the first author (Ono, 2003, 2004a, b).

Type specimens of the new species described herein are for the moment preserved in the collection of the Department of Zoology, National Museum of Nature and Science, Tokyo (NSMT), in the joint ownership between the Department of Zoology, National Museum of Nature and Science, and the Institute of Biological Sciences, University of Malaya.

### Descriptions of New Taxa

#### Family *Zodariidae*

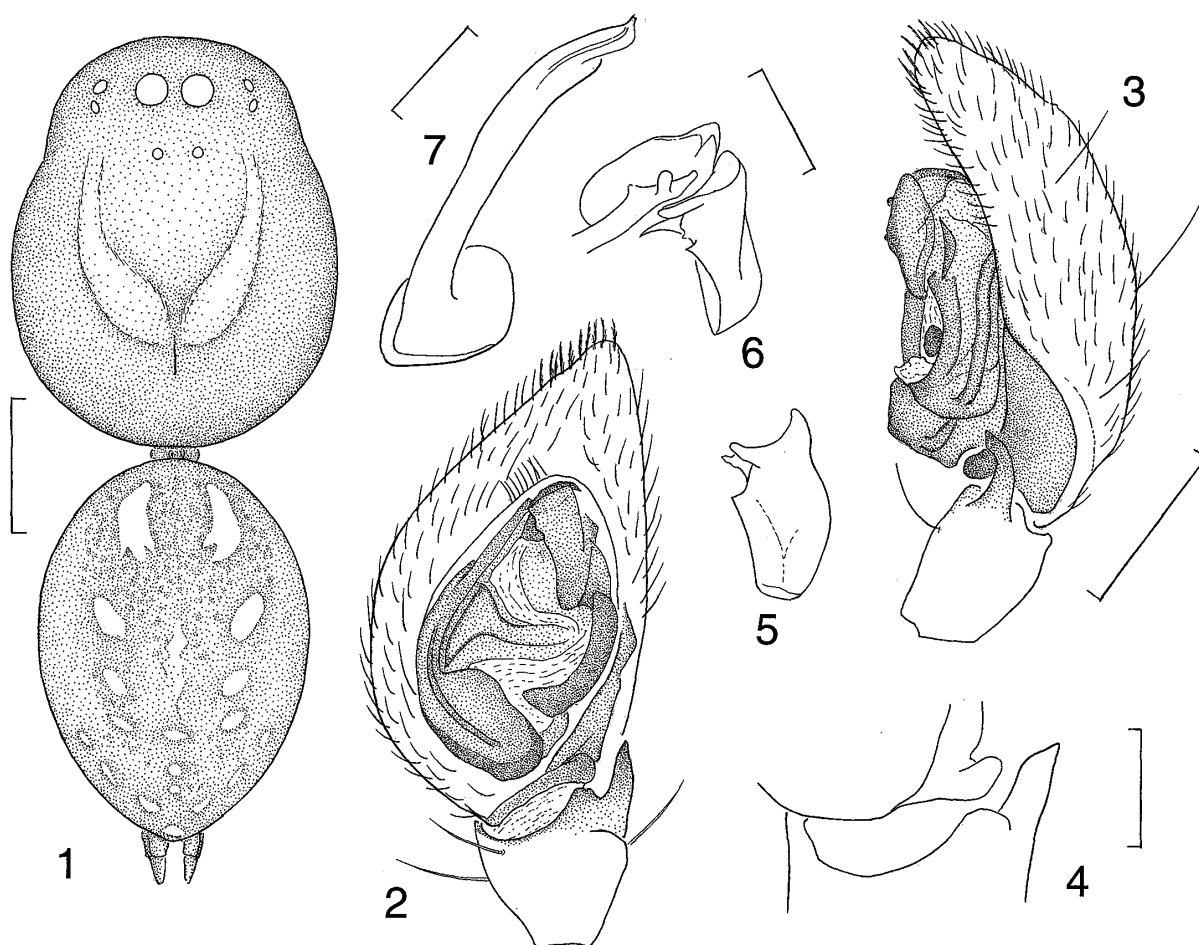
#### Genus *Mallinella* Strand, 1906

#### *Mallinella gombakensis* sp. nov.

(Figs. 1–7)

**Diagnosis.** This new species is peculiar in the genus and distinguishable from all the congeners in Southeast Asia in having palpal organ compactly set on cymbium. However, its basic structure and the shape of components are substantially typical for the genus: the embolus is short and wide, the median apophysis shows a typical pattern of a certain group in the genus. Besides, the carapace of *Mallinella gombakensis* is covered with tiny white hairs between ocular area and the median furrow, and the venter of opisthosoma is furnished with three pairs of long setae between epigastric area and spinnerets. These seem to be also characteristic.

**Type specimens.** Holotype, male from the Ulu Gombak Field Study Center of the University of Malaya, altitude around 200 m, Selangor, Malaysia, with FIT set between 27-XI and 3-XII-



Figs. 1–7. *Mallinella gombakensis* Ono & Hashim, sp. nov., holotype, male (NSMT-Ar 7408): 1, pro- and opisthosomata, dorsal view; 2, palpal organ, ventral view; 3, palpal organ, retrolateral view; 4, cymbial flange and retrolateral tibial apophysis of palp, ventral view from different angle; 5, median apophysis, ventral view from different angle; 6, distal tegular apophysis, median apophysis and the terminal part of embolus, axial view; 7, embolus, prolateral view. Scale bars: 1 mm for Fig. 1, 0.5 mm for Figs. 2, 3 and 0.2 mm for Figs. 4–7.

2005, M. Maruyama leg. (NSMT-Ar 7408). Paratypes: 24 males, same data as for the holotype (NSMT-Ar 7409–7418), 5 males, same locality, with FIT set between 15 and 19-VI-2006, M. Maruyama & Y. Katayama leg. (NSMT-Ar 7419).

**Description.** Holotype, male (female unknown): Measurement: Body length 5.95 mm; prosoma length 2.92 mm, width 2.25 mm; opisthosoma length 2.70 mm, width 1.69 mm; lengths of legs [total length (femur+patella+tibia+metatarsus+tarsus)]: I 11.95 mm ( $2.87+0.90+2.85+3.00+2.33$ ), II 9.94 mm ( $2.50+0.89+2.22+2.49+1.84$ ), III 9.97 mm ( $2.62+0.90+2.10+2.68+1.67$ ), IV 14.07 mm ( $3.33+0.94+$

$3.12+4.30+2.38$ ).

**Prosoma:** Carapace with a median furrow, longer than wide (length/width 1.30). Eyes: both the eye rows procurved in dorsal view,  $AME > ALE = PLE = PME$  in size (almost 11:5:5:5 in ratio), AME the largest,  $AME-AME < AME-ALE$  (5:8),  $PME-PME > PME-PLE$  (2:5), clypeus much longer than the anterior width of median ocular area (3:2), median ocular area longer than wide (length/width 1.07), wider in front than behind (anterior width/posterior width 1.33). Labium triangular, slightly longer than wide (length/width 1.14), sternum punctulate laterally, as long as wide, its lateral margin with small, pointed extensions fitting in coxal concavities of legs.

Chelicera without tooth, its fang very short. Legs furnished with long spines on femora, patella, tibiae and metatarsi as following spination. Femora: dorsal I 1-0-1, II-IV 1-1-1, prolateral I-III 0-0-1, IV 1-0-1, retrolateral IV 0-0-1; patellae: dorsal I-IV 0-0-1, pro- and retrolateral I-IV 1-1-0; tibiae: dorsal I-II 1-0-0 (weak), III-IV 1-0-1-0, prolateral I 1-1-0, II 1-1-1, III 1-1-0-1-1, IV 1-1-0-1-2, retrolateral II 0-1-1, III-IV 1-1-0-1-1, ventral I 2-1-1-1-2ap, II 1-2-1-2ap, III 1-2-2ap, IV 1-1-0-2ap; metatarsi: prolateral I-II 0-1-0, III-IV 1-1-0-1-1, retrolateral III 0-0-1, IV 1-1-0-1-1, ventral I-III 0-2-2-2ap, IV 2-2-1-2-2ap. Metatarsi of legs with scopula distally and tarsi with 20 pairs of short and strong setae ventrally. Upper claws of legs have six or seven teeth.

Male palp (Figs. 2–7): Retrolateral apophysis of tibia digitiform, wide at the base, and curved apically, ventral apophysis small and situated at the base of retrolateral apophysis; cymbial furrow short but developed with retrolateral fold and a sclerotized hump basally (Figs. 3, 4); median apophysis on tegulum longer than wide, with two teeth distally (Fig. 5, 6), embolus wide and relatively short, ensiform (Fig. 7), with a small embolic apophysis (Fig. 6).

Opisthosoma: Oval, without sclerotized plate, longer than wide (length/width 1.60). Three pairs of long setae are present on the venter of opisthosoma between the epigastric area and spinnerets. A sclerotized plate with a series of 20 peculiar strong setae in single row is present at the base of spinnerets. The posterior spinnerets are shorter than the anterior ones.

Coloration and markings (Fig. 1): Carapace black, with a pair of white parts between ocular area and median furrow with short white hairs, chelicerae chestnut-brown, maxillae and labium brown, sternum chestnut brown, palps brown, femora of legs blackish brown, other segments yellowish brown. Opisthosoma dark gray dorsally, with four pairs of larger white spots anteriorly and further small white spots posteriorly, some white spots present in both the sides, venter gray with two pairs of white stripes, spinnerets light yellowish brown.

**Variation.** The body length of the paratypes ranges between 4.98 and 6.48 mm.

**Distribution.** Malaysia (at present known only from the type locality).

**Etymology.** The specific name of this new spider is derived from the type locality.

*Mallinella maruyamai* sp. nov.

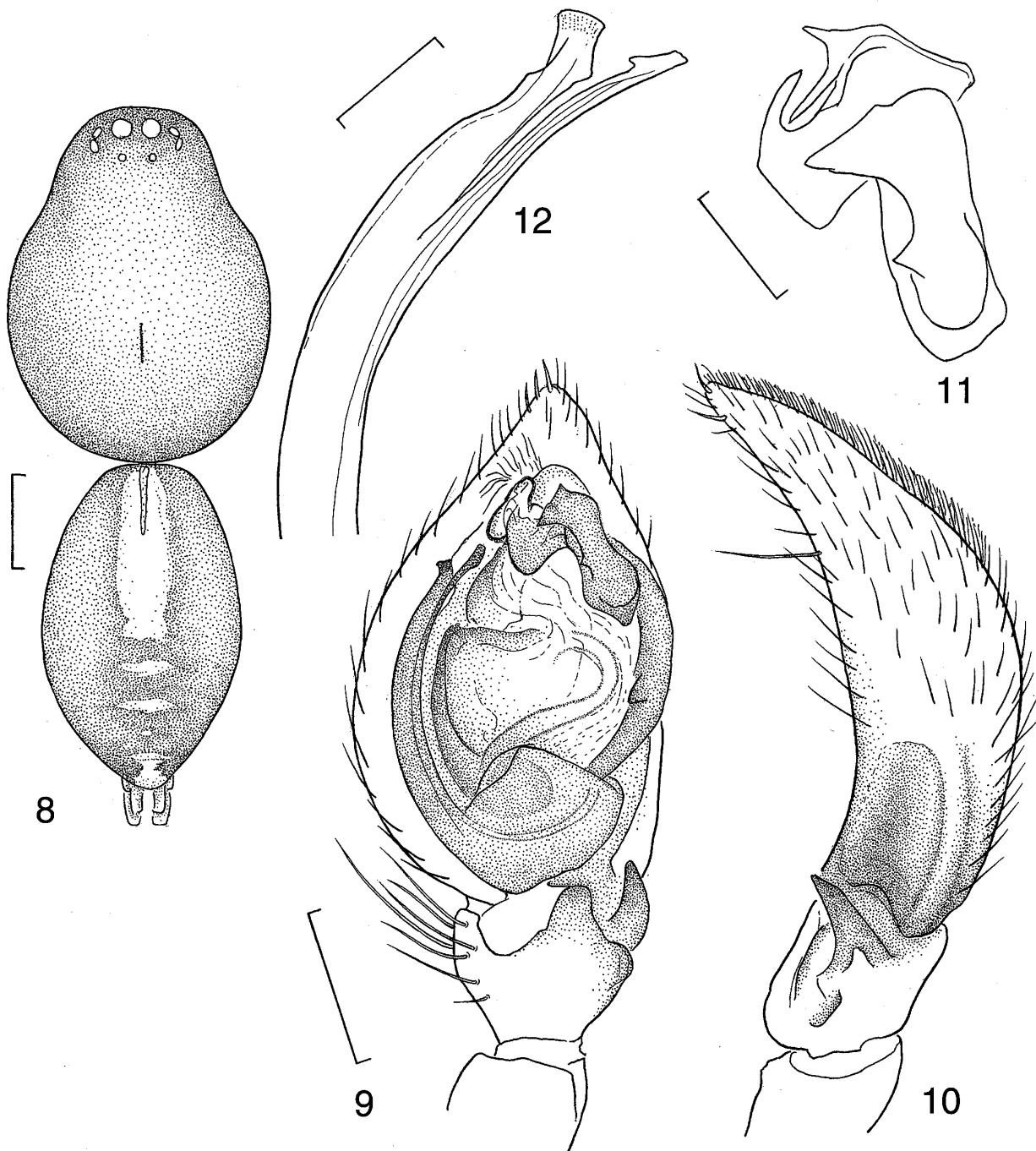
(Figs. 8–12)

**Diagnosis.** This new species seems to be closely related to *Mallinella nomurai* Ono, 2003, described from Tam Dao, altitude 900 m, Vinh Phu Province, Vietnam, in having thick embolus with wide tip and rostrated median apophysis on tegulum. However, both the species are distinguishable from each other by the details of embolus as well as the shape of median apophysis (cf. Figs. 11, 12 and Ono, 2003, p. 133, figs. 4–5). The latter species has larger plate on opisthosomal dorsum.

**Type specimens.** Holotype, male from the Ulu Gombak Field Study Center of the University of Malaya, altitude about 200 m, Selangor, Malaysia, collected with FIT set between 27-XI and 3-XII-2005, M. Maruyama leg. (NSMT-Ar 7420). Paratype: one male, same data as for the holotype (NSMT-Ar 7421).

**Description.** Holotype, male (female unknown): Measurement: Body length 7.47 mm; prosoma length 3.82 mm, width 3.01 mm; opisthosoma length 3.64 mm, width 2.44 mm; lengths of legs [total length (femur+patella+tibia+metatarsus+tarsus)]: I 14.47 mm (3.48+1.08+3.38+4.05+2.48), II 12.87 mm (3.26+1.08+2.72+3.45+2.36), III 12.14 mm (3.07+1.08+2.51+3.53+1.95), IV 16.29 mm (3.56+1.12+3.75+5.33+2.53).

Prosoma: Carapace with a median furrow, longer than wide (length/width 1.27). Eyes: the anterior eye row straight, the posterior one procurved in dorsal view, AME>ALE=PLE=AME in size (10:6:6:5 in ratio), AME the largest, AME-AME<AME-ALE (3:4), PME-PME<PME-PLE (3:5), clypeus much longer than the anterior width of median ocular area



Figs. 8–12. *Mallinella maruyamai* Ono & Hashim, sp. nov., holotype, male (NSMT-Ar 7420): 8, pro- and opisthosomata, dorsal view; 9, palpal organ, ventral view; 10, tibia and cymbium of palp, retrolateral view; 11, distal tegular apophysis and median apophysis, ventral view; 12, embolus, prolateral view. Scale bars: 1 mm for Fig. 8, 0.5 mm for Figs. 9, 10 and 0.2 mm for Figs. 11, 12.

(5:3), median ocular area as long as wide, wider in front than behind (anterior width/posterior width 1.22). Labium triangular, longer than wide (length/width 1.38), sternum punctulate laterally, slightly longer than wide (length/width 1.03), its lateral margins with small, pointed extensions fitting in coxal concavities of legs.

Chelicera has no teeth, with a short fang. Legs furnished with long spines on femora, patella, tibiae and metatarsi as following spination. Femora: dorsal I-IV 1-1-1-1, prolateral I 0-0-1-1, II-III 1-0-1-1, IV 1-1-0-1, retrolateral I and III-IV 0-0-0-1, II 0-0-0-1; patellae: prolateral I-IV 1; tibiae: dorsal III-IV 1-0-1-0, prolateral I-IV 1-1-

1, retrolateral I 0-1-1, II-III 1-1-1, IV 1-1-1-1, ventral I-II 2-2-2-2ap, III-IV 2-1-1-1-2ap; metatarsi: prolateral I-II 0-1-0, III-IV 1-1-1-1ap, retrolateral II 0-1-0, III 1-1-1-0, IV 1-1-1-1, ventral I-II 2-2-2-2ap, III 2-2-1-2-2ap, IV 2-1-2-2-1-2ap. Femora of legs I-II respectively with a weak swelling proximally, metatarsi of legs with scopula distally and tarsi with 11 pairs of short and strong setae ventrally. Upper claws of legs have six or seven teeth.

Male palp (Figs. 9–12): Retrolateral apophysis of tibia digitiform, straight with a pointed tip, ventral apophysis distinct; cymbial furrow short with retrolateral fold (Fig. 10); median apophysis on tegulum longer than wide, rostriform distally, with a small tooth at the middle (Fig. 11), embolus wide, bifid distally, with a developed embolic process (Fig. 12).

Opisthosoma oval with a fine sclerotized plate, longer than wide (length/width 1.49). Ventral surface is smooth and without strong setae. At the base of spinnerets, a sclerotized, transverse plate is present, which is furnished with a series of 32 peculiar strong setae in single row. Posterior spinnerets are shorter than the anterior ones.

Coloration and markings (Fig. 8): Carapace black, chelicerae reddish brown, maxillae, labium and sternum light reddish brown, palps reddish brown, femora of legs light reddish brown, other segments of legs yellowish brown. Opisthosoma black dorsally, with a large white band anteriorly, two transverse bars, a spot and further white markings posteriorly, venter beige with three purple indistinct stripes, spinnerets light yellowish brown.

**Variation.** The body length of the single paratype male is 8.08 mm.

**Distribution.** Malaysia (at present known only from the type locality).

**Etymology.** This new species is dedicated to the collector of the type specimens.

*Mallinella tumidifemoris* sp. nov.

(Figs. 13–16)

**Diagnosis.** This new species resembles

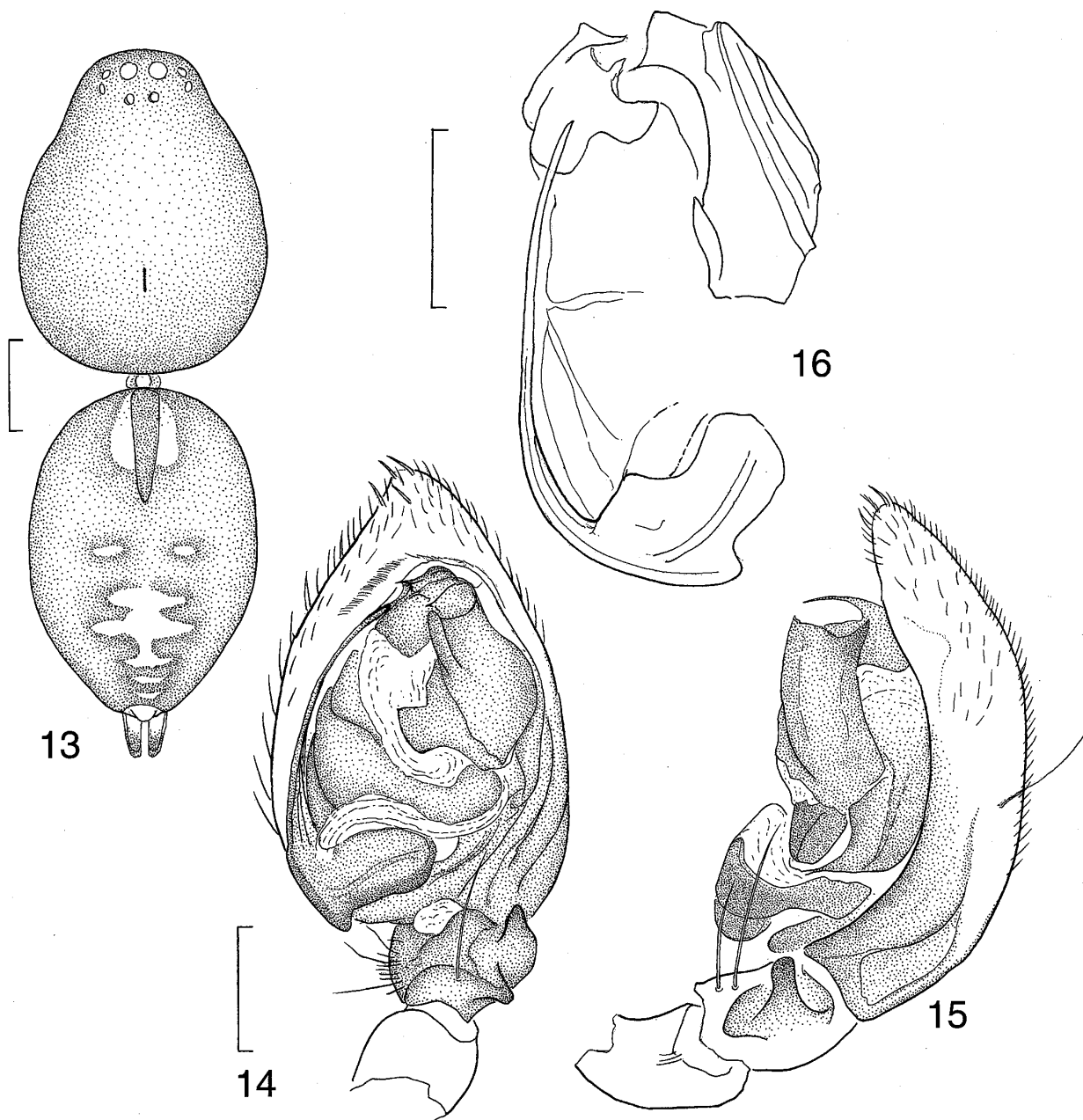
*Mallinella dambrica* Ono, 2004, described from Dambri, altitude 800 m, Lam Dong Province, Vietnam, in general appearance and in having thin and filiform embolus, but can be distinguished from the latter by the details of the palpal structure, especially by the shape of median apophysis. The median apophysis of *Mallinella tumidiformis* is much larger than that of the latter species and with a wing and some folds (cf. Figs. 14, 16 and Ono, 2004b, p. 72, figs. 12, 13). The retrolateral tibial apophysis of the new species is much shorter than that of the latter. The presence of distinct dorsal swelling on the proximal part of the femora of legs I-II is also discriminative in *Mallinella tumidifemoris*.

**Type specimen.** Holotype, male from the Ulu Gombak Field Study Center of the University of Malaya, altitude about 200 m, Selangor, Malaysia, collected with FIT set between 27-XI and 3-XII-2005, M. Maruyama leg. (NSMT-Ar 7422).

**Description.** Holotype, male (female unknown): Measurement: Body length 7.62 mm; prosoma length 3.84 mm, width 3.00 mm; opisthosoma length 3.75 mm, width 2.33 mm; lengths of legs [total length (femur+patella+tibia+metatarsus+tarsus)]: I 13.73 mm (3.45+1.09+3.11+3.83+2.25), II 12.88 mm (3.41+1.13+2.85+3.41+2.08), III 12.16 mm (3.22+1.13+2.51+3.56+1.74), IV 15.58 mm (3.78+1.13+3.39+4.95+2.33).

Prosoma: Carapace with a median furrow, longer than wide (length/width 1.28). Eyes: both the eye rows procurved in dorsal view, AME > ALE = PLE = AME in size (11:7:7:6 in ratio), AME the largest, AME-AME = AME-ALE, PME-PME < PME-PL (7:13), clypeus much longer than the anterior width of median ocular area (3:2), median ocular area as long as wide, wider in front than behind (anterior width/posterior width 1.15). Labium triangular, as long as wide, sternum punctulate laterally, longer than wide (length/width 1.09), its lateral margin with small, pointed extensions fitting in coxal concavities of legs.

Chelicera has no teeth, with a short fang. Legs



Figs. 13–16. *Mallinella tumidifemoris* Ono & Hashim, sp. nov., holotype, male (NSMT-Ar 7422): 13, pro- and opisthosomata, dorsal view; 14, palpal organ, ventral view; 15, palpal organ, retrolateral view; 16, distal tegular apophysis, median apophysis and embolus, prolateral view. Scale bars: 1 mm for Fig. 13 and 0.5 mm for Figs. 14–16.

furnished with strong spines on femora, patella, tibiae and metatarsi as following spination. Femora: dorsal I–IV 1-1-1-1, prolateral I–II 0-0-0-1, III 1-1-0-1, IV 1-0-0-1, retrolateral I–III 0-1-0-1, IV 0-0-0-1; patellae: prolateral I–IV 1; tibiae: dorsal III–IV 1-0-1-0, prolateral I 1-1-0-1-0-1, II 1-0-0-1, III 1-0-1, IV 1-1-1, retrolateral III–IV 1-1-1, ventral I 2-1-1-2-2-2ap, II 1-0-1-1-2-2ap, III–IV 2-2-2ap; metatarsi: prolateral I 1-0-0-0-0,

II 1-0-1-0-1ap, III–IV 1-1-1-1ap, retrolateral II 0-1-0, III 0-0-0-0-1, IV 1-1-1-1-1, ventral I 1-2-2-2ap, II 2-2-2-1-2ap, III 2-2-2-2ap, IV 2-2-2-2-2ap. Femora of legs I–II respectively with a dorsal swelling proximally, metatarsi of legs with scopula distally and tarsi with many pairs of short and strong setae ventrally. Upper claws of legs have six or seven teeth.

Male palp (Figs. 14–16): Retrolateral apoph-

ysis of tibia digitiform and short, ventral apophysis indistinct; cymbial furrow not developed, retrolateral fold indistinct (Fig. 15); median apophysis on tegulum developed and large, with rostriform tip with pointed end, a digitiform process and a wide prolateral wing (Fig. 14), embolus filiform, without embolic apophysis (Fig. 16).

**Opisthosoma:** Oval, with a narrow sclerotized plate and longer than wide (length/width 1.61), its venter without strong setae. A sclerotized plate with a series of 24 peculiar strong setae in single row is present at the base of spinnerets. Posterior spinnerets are shorter than the anterior ones.

**Coloration and markings** (Fig. 13): Carapace reddish black, chelicerae also reddish, maxillae and labium light yellowish brown, sternum chestnut brown, palps brown, legs yellowish brown. Opisthosoma black dorsally, with a brown plate anteriorly, a pair of white spots at the middle and further white markings posteriorly, some white stripes present in both the sides, venter beige with three brown stripes and some white spots, spinnerets light yellowish brown.

**Distribution.** Malaysia (at present known only from the type locality).

**Etymology.** The specific name of the new spider is formed by a combination of Latin adjective *tumidus* (swollen) and noun genitive *femoris* (of femur).

#### Genus *Malayozodarion* gen. nov.

**Type species.** *Malayozodarion hoiseni* sp. nov., by monotypy

**Diagnosis.** This new genus is designated with a combination of following characteristics of male palp: Tibia possesses a large spine at the base and an extraordinarily developed retrolateral apophysis which has a wide lamellar setae at the middle and an expanded tip with a tooth; tarsus with a special hair tuft dorsally, cymbial furrow extremely developed and long, with retrolateral fold; median apophysis on tegulum simple and scutiform, distal tegular apophysis larger than the

median one and twisted; embolus filiform and long, without embolic apophysis. Other than the genital structure, some general characters as follows also prove the genus peculiar: eyes almost same in size but  $AME < PME$ , anterior eyes close to one another, chelicera with two teeth on promargin of fang furrow, coxa and the distal half of the tibia of leg I transparent or discolored, femoral organ present, with several hairs in a large groove, femora of leg I-II furnished with rows of fine wrinkles pro- and retrolaterally, opisthosoma without scutum, concolor and without any spots or markings.

**Etymology.** The generic name is a neuter noun formed by a combination of the place-name Malaya (=Peninsular Malaysia) and Greek *zodariion*, meaning a small creature of Malaya.

**Remarks.** *Malayozodarion* may stand close to the genus *Suffasia* Jocqué, 1991, *Zodariinae*, sensu Jocqué (1992), Ono (2006) and Benjamin (2007), known from India, Nepal and Sri Lanka, in following characteristics of males: the small body size (2–3 mm), carapace domed, femoral organ present, chilum present, cymbium narrow and long, palpal tibia swollen or with an extraordinarily developed spines and apophysis, median apophysis on tegulum simple, distal tegular apophysis large. However, this new genus differs from the latter with anterior eyes close to one another, chilum indistinct and weak sclerotized, femora of leg I-II with rows of fine wrinkles, retrolateral tibial apophysis with a specialized hair at the middle, cymbium with special hair tuft dorsally, cymbial furrow deeper and longer, embolus much longer and extending over the distal tegular apophysis, and with opisthosoma concolor.

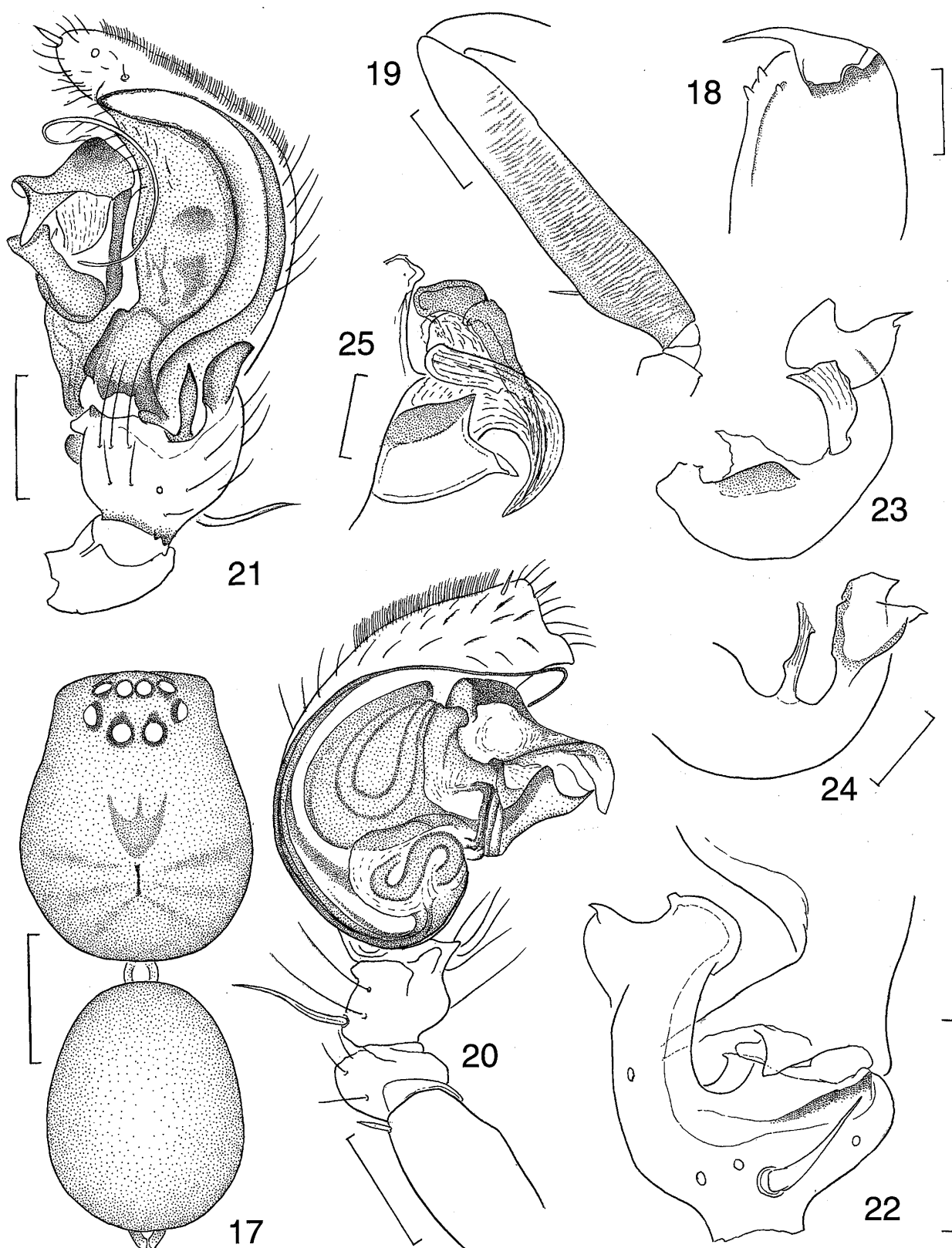
#### *Malayozodarion hoiseni* sp. nov.

(Figs. 17–25)

**Diagnosis.** See the above generic diagnosis.

**Type specimen.** Holotype, male from a forest near Tanah Rata, altitude 1700–1800 m, Cameron Highlands, Pahang, Malaysia, 25-I-





Figs. 17–25. *Malayozodarium hoiseni* Ono & Hashim, sp. nov., holotype, male (NSMT-Ar 7423): 17, pro- and opisthosomata, dorsal view; 18, left chelicera, ventral view; 19, femur of left leg I, prolateral view; 20, palpal organ, prolateral view; 21, palpal organ, retrolateral view; 22, tibia and proximal part of cymbium of palp, dorsal view; 23, 24, retrolateral tibial apophysis, ventral view from different angles; 25, distal tegular apophysis and median apophysis, ventral view. Scale bars: 0.5 mm for Fig. 17, 0.2 mm for Figs. 19–22 and 0.1 mm for Figs. 23–25.

2007, H. Ono leg. (NSMT-Ar 7423).

**Description.** Holotype, male (female unknown): Measurement: Body length 2.19 mm; prosoma length 1.17 mm, width 0.90 mm; opisthosoma length 0.90 mm, width 0.75 mm; lengths of legs [total length (femur+patella+tibia+metatarsus+tarsus)]: I 3.38 mm (0.91+0.31+0.84+0.81+0.51), II 2.73 mm (0.72+0.29+0.58+0.67+0.47), III 2.73 mm (0.75+0.29+0.55+0.76+0.38), IV 3.69 mm (0.97+0.30+0.78+1.10+0.54).

**Prosoma:** Carapace with a median furrow, longer than wide (length/width 1.30). Eyes: the anterior eye row straight or slightly procurved from different angles and the posterior row procurved in dorsal view,  $PME = PLE > AME = ALE$  (slight difference in size), anterior eyes close to each other, posterior eyes apart from each other,  $PME - PME > PME - PLE$  (9:8 in ratio), clypeus slightly longer than the anterior width of median ocular area (12:7), median ocular area longer than wide (length/width 1.13), wider behind than in front (anterior width/posterior width 0.70). Labium triangular, slightly wider than long (length/width 0.93), sternum also slightly wider (length/width 0.95), its lateral margin with small, pointed extensions fitting in coxal concavities of legs. Chelicera (Fig. 18) furnished with two teeth on promargin of fang furrow, and a denticle on retromargin, fang very short. Femoral organ present on legs I-IV, with several hairs in a large groove situated distally. Femora of legs I-II furnished with rows of fine wrinkles (Fig. 19) on both the lateral surfaces (indistinct on leg III-IV). Femora of legs I-III each with 1-0 dorsal spine, of leg IV 1-1-0, other segments of legs spineless, upper claws of legs with four or five teeth.

**Male palp** (Figs. 20–25): Tibia possesses a complicated process: A retrolateral spine is extremely large, and the retrolateral apophysis well developed and has a wide lamellar setae at the middle and an expanded tip with a tooth (Figs. 23, 24), the ventral apophysis small (Fig. 20); cymbial furrow extremely developed and long, with retrolateral fold (Fig. 21); median apophysis

on tegulum simple and scutiform (Figs. 20, 25), the distal tegular apophysis larger than the median one and twisted (Fig. 25); embolus filiform and long, without embolic apophysis (Figs. 20, 21).

**Opisthosoma:** Oval, longer than wide (length/width 1.20), without sclerotized plate. All the spinnerets relatively short, the anterior one cylindrate, the median and posterior ones hardly visible in ventral view, colulus present. Anal tubercle is very large.

**Coloration and markings** (Fig. 17): Carapace chestnut brown, shiny, with a black marking in butterfly-wing shape at the center, each eye with a black ring, chelicerae chestnut brown, maxillae white, labium and sternum light yellowish brown, tibia of palps dark brown, other segments of palps grayish brown, coxa of legs transparent, the distal half of tibia of leg I white, femora I-IV chestnut brown, other segments of legs yellowish brown. Opisthosoma purplish black dorsally, without markings, venter white, pedicel and spinnerets white.

**Distribution.** Malaysia (at present known only from the type locality).

**Etymology.** This new species is dedicated to Dr. Hoi Sen Yong, University of Malaya.

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## マレーシア産ハウシグモ科（クモ目）の4新種

小野展嗣・Rosli Hashim

マレー半島産ハウシグモ科の *Mallinella* 属の3新種および1新属新種を以下のように命名して記載した。 *Mallinella gombakensis* sp. nov., *Mallinella maruyamai* sp. nov., *Mallinella tumidifemoris* sp. nov., *Malayozodarion hoiseni* gen. et sp. nov. *Mallinella* 属の新種は Selangor 州の Ulu Gombak マラヤ大学付属野外研究センターの林床から、昆虫採集を目的としたフライト・インターセプト・トラップの副産物として採集されたものである。いっぽう *Malayozodarion* 属の新種は Pahang 州のキャメロン・ハイランドの森林中の土壌から篩取り法によって得られたものである。それぞれの新種の特徴及び類縁関係について記した。